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Recognizing the Trends

Solar system planetary science has traditionally focused on understanding in depth individual planets. While there have been some efforts at synergy, most studies have focused on understanding the details of individual planets. Now that we are in the era of exoplanet science, with thousands of known planets and hundreds that have been characterized to varying degrees, the systematics of planetary science are becoming apparent. This also means that, for the first time, what had previously been seen as individual quirks of solar system planets are instead being recognized as part of the normal range of planetary behavior. In my talk I will consider a number of such characteristics and explain how we are now starting to understand their true context. In particular I will discuss the atmospheric composition, clouds, hazes, and winds of giant planets, trace gasses in the atmosphere of Venus, and the presence and absence of atmospheres on various terrestrial worlds.